Non-antibody cancer therapy with a tumor suppressor gene

Technology #2491

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Limiting the Side Effects from Cancer Therapy: According to the American Cancer Society, the incidence of cancer and the deaths due to cancer remain high. In 2010, over 500,000 Americans might die of cancer and nearly 1.5 million new cancer cases are expected to be diagnosed. As the incidence of cancer continues to rise, cancer therapies are needed more than ever. Conventional chemotherapy is limited by far reaching negative side effects due to the drug’s systemic toxicity that the patient may not be able to tolerate. Therefore, entirely new treatment methods are called for in order to treat and manage cancer.

Non-Antibody, Naturally Occurring Tumor Suppressor Protein for Treating Cancer PTEN is a ubiquitously expressed tumor suppressor gene that produces a 55 kDa intracellular protein known to prevent cell proliferation. This technology identifies a novel PTEN variant (PTEN-long, 70 kDa) that is longer than normal PTEN protein and secreted and expressed extracellularly. Both in vitro and in vivo tests have shown that PTEN-long exhibits tumor suppressor activity by increasing mouse survival and tumor regression. Different from the typical protein-based cancer therapies, this technology is not based on an antibody. It provides the advantage of manufacturing a naturally occurring tumor suppressor protein that can be injected to treat tumors and angiogenic blood vessels.

Applications: • The technology can be used for non-antibody cancer therapy. • The protein is suitable for injection to treat tumors and angiogenic blood vessels. • The technology can be introduced as a therapy during periods of cell stress when cells undergo apoptosis, for example during stroke or myocardial infarction.

Advantages: • Effective manufacturing of a tumor suppressor protein for treatment of cancer. • Can be administered as an injection, which is useful to treat tumors and angiogenic blood vessels • The protein exhibits reduced side effects as it is naturally occurring.

Patent Status: Patent Pending

Licensing Status: Available for Licensing and Sponsored Research Support ”

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